

**SECTORIZED SMART ANTENNA SYSTEM AND
METHOD**

Abstract of the Invention

A sectorized smart antenna system includes multiple sector antennas with a software control algorithm for flexible association of physical antennas to a logical serving sector to provide signal coverage in a particular region of the cell served by the base station. The control algorithm can adapt to different situations without requiring any, or only very limited, physical hardware changes to reconfigure a base station to balance the traffic load throughout the cell. The smart antenna system and method includes measuring and recording a mobile station's signal strengths and its rate of changes received by an antenna in a serving sector relative to other antennas in either the same serving sector or different serving sector to determine the mobile station location and its movement, determining when a threshold signal level is reached, and handing-off the mobile station to an adjacent antenna, serving sector, or cell.